Course Syllabus
Chemistry 275
Supervised Problems

Course Description: Individual study and/or laboratory research.

Number of Credit Hours: 1 – 4 semester hours

Course Prerequisites and Corequisites: Prerequisite: Permission of instructor. Pass-Fail grading.

Program Learning Outcomes:
3. The student will perform qualitative/quantitative chemical analyses/syntheses using modern instrumentation.
4. The student will articulate scientific information through oral communication. (depending on instructor or project)
5. The student will articulate scientific information through written communication.
6. The student will demonstrate ability to integrate knowledge content, laboratory skill, critical thinking and problem solving, and communication skills via participation in research projects.

General Education Core Curriculum Objectives: There are no specific general education core curriculum objectives in this course. This course is not a general education core curriculum course.

Course Objective: The student should demonstrate their ability to conduct independent research.

Student Learning Outcomes: Upon completion of this course, students will be able to:
- apply the chemistry knowledge obtained during the college career. (PLO 3, 6)
- analyze experimental results based upon trends in data. (PLO 5)
- practice the safe use/handling of chemicals and their proper storage. (PLO 3)

Outline of Topics (approximate course time):
Variable: dependent on instructor and selected course content.

Face Covering and Social Distancing Policies.

Masks (cloth face coverings) must be worn over the nose and mouth at all times in this class and appropriate physical distancing must be observed. Students not wearing a mask and/or not observing appropriate physical distancing will be asked to leave the class. All incidents of not wearing a mask and/or not observing appropriate physical distancing will be reported to the Office of Student Rights and Responsibilities. Students who are reported for multiple infractions of not wearing a mask and/or not observing appropriate physical distancing may be subject to disciplinary actions.


Instructor: Dr. Matibur Zamadar

Department: Chemistry and Biochemistry

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Office: 104A Chemistry Building

Class time and place: Friday: 12 noon – 12:50 p.m., Room 132 Math. Bldg.

Office Hours: MWF, 10.00 am-11.30 am, and R 1:00 am-2.30 pm (via Zoom).

Materials Required:
1. A 1/2-inch binder – for assignments given in class
2. Access to puncher/perforator and printing services
3. Text resources are available online or provided by the instructor
4. A working email address

Course calendar

This course is for 1-4 credits and repeatable. The course involves a mentored research experience for the duration of a semester (15 weeks) designed to develop research skills through participating in research and to develop some of the skills needed for professional success after graduation. Students are expected to prepare prior to each lab (literature and concepts), attend research hours (minimum of 3 hours per week per credit hour to conduct experiments), and report results (paper, presentation). Students have required academic components and deliverables: written work (daily notebook, research paper) and oral (presentation). These activities, inclusive of the lab expectations and academic components, average a minimum of 6 hours of work each week per credit hour.

Grading method:

1. Attendance: mandatory – 50 %. The Instructor will take attendance during each class. Only two absences allowed, excused or unexcused. Additional absences will be penalized as deemed fit by the Instructor.
2. Assignments 1-4 , 5% each – 20%
3. Skills Narrative submitted on D2L by deadline – 25%
4. Survey submitted by student on D2L by deadline – 5%
5. ≥ 90% = pass; < 90% = fail

Notes on assignments

All assignments must be typed unless otherwise stated by the instructor. The typing should be single-spaced in Times New Roman font size 12 and 1-inch margin all-round. Submit all assignments in a 1/2-inch binder.

Notes on Reference Format:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Date</th>
<th>Instructor or Presenter</th>
<th>Notes/Assignments</th>
</tr>
</thead>
</table>
| Research at SFASU Chemistry and Biochemistry                        | September 4   | Zamadar                 | Students assigned to Research Advisors  
| Assignment #1: Meet with your research professor to discuss project(s). Submit a project topic and a 1-paragraph narrative why you want to work on that topic in the next class. |
| Opportunities in the department and after graduation                | September 11  | Zamadar                 | Students submit assignment #1  
| Assignment #2: Students meet with advisor for further discussion/action on the project and submit a 1-paragraph narrative of that meeting by the next class. |
| Safety Training                                                      | September 18  | Franks                  | Assignment #3 Complete Laboratory Safety Agreement                                                                                             |
| Use of Excel – General operation, Graphs, charts etc.               | September 25  | Fry                     | Assignment #3 Complete Laboratory Safety Agreement                                                                                             |
| More than just words-What MS Word can do for you                    | October 2     | Barngrover              | Assignment #3 Complete Laboratory Safety Agreement                                                                                             |
| Maintaining a good laboratory notebook                              | October 9     | Odunuga                 | Assignment #3 Complete Laboratory Safety Agreement                                                                                             |
| Ethics in Research                                                  | October 16    | Garry                   | Assignment #3 Complete Laboratory Safety Agreement                                                                                             |
| SFA Library Resources-how to do a literature search                 | October 23    | Library Staff           | Assignment #4 Students search five ANY chemistry/biochemistry peer-reviewed articles by using Sci-Finder (2 articles), ACS (2), PubMed (1). The articles must be submitted into the Dropbox in D2L. In addition, a word document must be submitted in which all articles should be listed in American Chemical Society (ACS)-Journal of Chemical Education format. |
| Writing a good proposal and formal research reports                 | October 30    | Sengupta                | Assignment #4 Students search five ANY chemistry/biochemistry peer-reviewed articles by using Sci-Finder (2 articles), ACS (2), PubMed (1). The articles must be submitted into the Dropbox in D2L. In addition, a word document must be submitted in which all articles should be listed in American Chemical Society (ACS)-Journal of Chemical Education format. |
| Research trainings with your research professor                     | November 6-27 | Research Professor       | Assignment #5: Students write a 2-page narrative, minimum 750 words, of the research skills and experience they have learned in their advisor’s laboratory. Assignment should be typed, signed by both advisor and student, and brought to next class. In this section, students could present representative data that explains students obtain necessary training and skills for the project. The narrative must be signed by advisor and student. |
| Presentations by former student(s)/Welch application                | December 4    | Zamadar                 | Assignment #6 Survey                                                                                                                               |

Note: This syllabus may be subject to changes at the discretion of the Instructor. The Instructor will duly notify students of any changes to the syllabus.  
Dr. Matibur Zamadar, August 26, 2020